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Present Claims

41. (Original) An electro-optical glazing structure comprising:
- an electro-optical glazing panel including liquid crystal material interposed between a pair of optically-transparent substrates, said electro-optical glazing panel having an electrically-switchable scattering mode of operation and electrically-switchable transmission mode of operation; and
- an optical state switching mechanism for electrically-switching said electro-optical glazing panel into said electrically-switchable scattering mode of operation and into said electrically-switchable transmission mode of operation,
- wherein the liquid crystal material comprises a PSCT liquid crystal material including a non-reactive blend of chiral liquid crystal and a monomer, the monomer lacking the mesogenic group of the general formula:
- $$[\text{Si}(\text{CH}_3)\text{O}]_n$$

42. (Original) The electro-optical glazing structure of claim 41, which has total-scattering and total-transmission modes of operation for improved control over the flow of electromagnetic radiation within the solar region of the electromagnetic spectrum.

43. (Original) The electro-optical glazing structure of claim 42, in which the modes of operation avoid the use of energy absorbing mechanisms.

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44. (Original) The electro-optical glazing structure of claim 42 which has a broad band of operation, including the near-IR, visible and near-UV portions of the electromagnetic spectrum.

45. (Original) The electro-optical glazing structure of claim 41, wherein the optically transparent substrates comprise float-glass.

46. (Original) An electro-optical glazing structure comprising:
an electro-optical glazing panel including liquid crystal material interposed between a pair of optically-transparent substrates, said electro-optical glazing panel having an electrically-switchable scattering mode of operation and electrically-switchable transmission mode of operation; and
an optical state switching mechanism for electrically-switching said electro-optical glazing panel into said electrically-switchable scattering mode of operation and into said electrically-switchable transmission mode of operation,
wherein the liquid crystal material comprises a non-reactive blend of a chiral liquid crystal and ethylene glycol dimethacrylate.

47. (Original) The electro-optical glazing structure of claim 46, which has total-scattering and total-transmission modes of operation for improved control over the flow of electromagnetic radiation within the solar region of the electromagnetic spectrum.

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48. (Original) The electro-optical glazing structure of claim 47, in which the modes of operation avoid the use of energy absorbing mechanisms.

49. (Original) The electro-optical glazing structure of claim 47 which has a broad band of operation, including the near-IR, visible and near-UV portions of the electromagnetic spectrum.

50. (Original) The electro-optical glazing structure of claim 46, wherein the optically transparent substrates comprise float-glass.

51. (Original) An electro-optical glazing structure comprising:
an electro-optical glazing panel including liquid crystal material interposed between a pair of optically-transparent substrates, said electro-optical glazing panel having an electrically-switchable scattering mode of operation and electrically-switchable transmission mode of operation; and
an optical state switching mechanism for electrically-switching said electro-optical glazing panel into said electrically-switchable scattering mode of operation and into said electrically-switchable transmission mode of operation,
wherein the liquid crystal material comprises a non-reactive blend of a chiral liquid crystal and a monomer selected from the group consisting of ethylene glycol dimethacrylate, urethane acrylates having a viscosity of about 300 to about 400 centipoise, and epoxies having a viscosity of about 1400 to about 1800 centipoise, and combinations comprising at least one of the foregoing monomers.

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52. (Original) The electro-optical glazing structure of claim 52, which has total-scattering and total-transmission modes of operation for improved control over the flow of electromagnetic radiation within the solar region of the electromagnetic spectrum.

53. (Original) The electro-optical glazing structure of claim 52, in which the modes of operation avoid the use of energy absorbing mechanisms.

54. (Original) The electro-optical glazing structure of claim 52 which has a broad band of operation, including the near-IR, visible and near-UV portions of the electromagnetic spectrum.

55. (Original) The electro-optical glazing structure of claim 51, wherein the optically transparent substrates comprise float-glass.

56. (Original) An electro-optical glazing structure comprising:
an electro-optical glazing panel including liquid crystal material interposed between a pair of optically-transparent substrates, said electro-optical glazing panel having an electrically-switchable scattering mode of operation and electrically-switchable transmission mode of operation; and
an optical state switching mechanism for electrically-switching said electro-optical glazing panel into said electrically-switchable scattering mode of operation and into said electrically-switchable transmission mode of operation,

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wherein the liquid crystal material comprises a PSCT liquid crystal material including a chiral liquid crystal, a monomer and a dichroic dye.

57. (Original) The electro-optical glazing structure of claim 56, which has total-scattering and total-transmission modes of operation for improved control over the flow of electromagnetic radiation within the solar region of the electromagnetic spectrum.

58. (Original) The electro-optical glazing structure of claim 57, in which the modes of operation avoid the use of energy absorbing mechanisms.

59. (Original) The electro-optical glazing structure of claim 57 which has a broad band of operation, including the near-IR, visible and near-UV portions of the electromagnetic spectrum.

60. (Original) The electro-optical glazing structure of claim 56, wherein the optically transparent substrates comprise float-glass.

61. (Original) The electro-optical glazing structure of claim 56, wherein said dichroic dye is an anthraquinone dye.

62. (Original) An electro-optical glazing structure comprising:
an electro-optical glazing panel including liquid crystal material interposed between a pair of optically-transparent substrates, said electro-optical glazing panel

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having an electrically-switchable scattering mode of operation and electrically-switchable transmission mode of operation; and

an optical state switching mechanism for electrically-switching said electro-optical glazing panel into said electrically-switchable scattering mode of operation and into said electrically-switchable transmission mode of operation,

wherein the liquid crystal material comprises a non-reactive blend of a chiral liquid crystal and a monomer and a surfactant.

63. (Original) The electro-optical glazing structure of claim 62, which has total-scattering and total-transmission modes of operation for improved control over the flow of electromagnetic radiation within the solar region of the electromagnetic spectrum.

64. (Original) The electro-optical glazing structure of claim 63, in which the modes of operation avoid the use of energy absorbing mechanisms.

65. (Original) The electro-optical glazing structure of claim 63 which has a broad band of operation, including the near-IR, visible and near-UV portions of the electromagnetic spectrum.

66. (Original) The electro-optical glazing structure of claim 62, wherein the optically transparent substrates comprise float-glass.

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67. (Original) The electro-optical glazing structure of claim 62, wherein said surfactant comprises Poly (Dimethylsiloxane).

83. (Original) A liquid crystal material for an electro-optical glazing structure comprising a PSCT liquid crystal material including a non-reactive blend of a chiral liquid crystal and a monomer, the monomer lacking the mesogenic group of the general formula:



84. (Original) A liquid crystal material for an electro-optical glazing structure comprising a non-reactive blend of a chiral liquid crystal and ethylene glycol dimethacrylate.

85. (Original) A liquid crystal material for an electro-optical glazing structure comprising a non-reactive blend of a chiral liquid crystal and a monomer selected from the group consisting of ethylene Glycol glycol Dimethacrylate dimethacrylate (EGD), urethane acrylates having a viscosity of about 300 to about 400 centipoise, and epoxies having a viscosity of about 1400 to about 1800 centipoise, and combinations comprising at least one of the foregoing monomers.

86. (Original) A liquid crystal material for an electro-optical glazing structure comprising a PSCT liquid crystal material and a dichroic dye.

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87. (Original) The liquid crystal material of claim 86, wherein said dichroic dye is an anthraquinone dye.

88. (Original) A liquid crystal material for an electro-optical glazing structure comprising a non-reactive blend of a chiral liquid crystal and a monomer, and a surfactant.

89. (Original) The liquid crystal material of claim 88, wherein said surfactant comprises Poly (Dimethylsiloxane).